

EA OR128-98-12

Addressee:

This letter is to notify you that the Bureau of Land Management (BLM), Coos Bay District, has prepared an Environmental Assessment (EA) to assess implementation of watershed restoration projects in the Middle Fork Coquille Watershed (EA No. 128-98-12). Then proposed projects are part of the Jobs-in-the-Woods program which is intended to begin restoring watershed conditions and provide economic revitalization under the President's initiative.

The Proposed Action seeks to 1) silviculturally treat approximately 20 acres of riparian habitat in Brownson, Big and Slide Creeks and the Middle Fork Coquille River to re-establish native riparian forest composition, and (2) place of 39 aquatic habitat structures in Bear Pen Cr, 53 aquatic habitat structures in Brownson Cr, 12 aquatic habitat structures in Big Cr, and 12 aquatic habitat structures in Lower Slide Cr. The stream enhancement projects in Big and Slide Creeks include the yarding and placement of whole trees and logs in these streams to enhance habitat for aquatic species.

The No-Action Alternative, the Proposed Action , and their design features are described in the attached Environmental Assessment (EA) OR128-98-12.

The proposed projects would be accomplished by contracts in fiscal years 1998 and 1999. The EA concludes a Finding of No Significant Impact (FONSI). Comments on the appropriateness of the FONSI are requested until March 24, 1998, at which time a Decision Record will be prepared (a 30-day comment period).

Questions regarding the enclosed EA and FONSI should be directed to Jo Christensen at (541) 756-0100. Written comments may be sent to the Coos Bay district Office, 1300 Airport Lane, North Bend, OR, 97459, attn Jo Christensen. Comments may also be sent via email to: coosbay@or.blm.gov.

Comments, including names and street addresses of respondents, will be available for public review at the above address during regular business hours (8:00 a.m. to 4:30 p.m.), Monday through Friday, except holidays, and may be published as part of the EA document or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Sincerely,

Neal Middlebrook
Myrtlewood Area Manager

Enclosure:
EA/FONSI for OR128-98-12

Finding of No Significant Impact (FONSI)
for
EA No. OR128-98-12

Watershed Restoration Projects within the Middle Fork Coquille Watershed

The Bureau of Land Management (BLM), Coos Bay District, has analyzed a proposal to conduct watershed restoration projects within the Middle Fork Watersheds. Proposed projects include (1) silvicultural treatment of approximately 20 acres of riparian habitat in Brownson, Big and Slide Creeks and the Middle Fork Coquille River to re-establish native riparian forest composition, (2) placement of 39 aquatic habitat structures in Bear Pen Cr, 53 aquatic habitat structures in Brownson Cr, 12 aquatic habitat structures in Big Cr, and 12 aquatic habitat structures in Lower Slide Cr. The stream enhancement projects in Big and Slide Creeks include the yarding and placement of whole trees and logs to enhance habitat for aquatic species. The No-Action Alternative, the Proposed Action, and their design features are described in Environmental Assessment (EA) OR128-98-12.

These projects are proposed for implementation in fiscal year 1998.

The EA is tiered to both the *Coos Bay District Final Proposed Resource Management Plan and Environmental Impact Statement* (BLM, September 1994) (RMP), the accompanying *Record of Decision* (BLM, May 1995) (ROD), and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, February 1994) (FSEIS; Northwest Forest Plan), its *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, and accompanying *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, April 1994).

The proposed projects are among several identified through watershed analysis, and are in conformance with the Aquatic Conservation Strategy (ACS) objectives as described in the Standards and Guidelines (S&G's, pp. B-9 through B-34) of the Northwest Forest Plan. Watershed analyses have been conducted for the Middle Fork Coquille Analytical Watershed (BLM 1994), the Sandy-Remote Watershed (BLM, Second Iteration, 1996), and the Big Creek Watershed Analysis (BLM 1997), and are hereby incorporated by reference.

The proposed action has been designed to minimize disturbance effects on the northern spotted owl and marbled murrelet. The BLM is formally consulting with the U.S. Fish and Wildlife Service to ensure that the proposed action would not affect any species listed under the Endangered Species Act. The final decision as to the timing of the proposed activities to minimize disturbance will be based upon the results of that consultation.

Additionally, the actions in the proposal have been designed to minimize disturbance to coho salmon and steelhead trout, which have been proposed for listing under the Endangered Species

Act. The BLM is formally conferencing with the National Marine Fisheries Service to ensure that the proposed action would not affect any species listed proposed for listing under the Endangered Species Act. The final decision as to the timing and implementation of the proposed activities to minimize disturbance will be based upon the results of that conference.

The proposed action is expected to cause no significant adverse impacts to the human environment. There would be no effects on:

- | | |
|--|----------------------------------|
| 1) Air Quality | 7) Wilderness Values |
| 2) Areas of Critical Environmental Concern | 8) Cultural & Historic Values |
| 3) Prime or Unique Farmlands | 9) Noxious Weed Spread |
| 4) Native American Religious Concerns | 10) Wetlands |
| 5) Wild & Scenic Rivers | 11) Port-Orford Cedar Management |
| 6) Hazardous Materials | |

Some minor short-term impacts to water quality, flood plains, riparian zones, and T&E Species, as discussed above, are expected to occur, and are addressed in the EA.

Determination:

On the basis of the above information contained in the EA, and all other information available to me as is summarized above, it is my determination that the Proposed Action does not constitute a major Federal Action affecting the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) is unnecessary and will not be prepared.

Neal Middlebrook
Myrtlewood Area Manager

Date

Decision Record
for
Aquatic Habitat Restoration Projects
within the Middle Fork Coquille Watershed
EA OR 128-98-12

Decision:

My decision is to adopt the Proposed Action for the Aquatic Habitat Enhancement portion of the projects described and analyzed in the Environmental Analysis (EA) for the Middle Fork Coquille River Watershed. These projects include the placement of 39 cull logs in Bear Pen Creek and 53 cull logs and 3 myrtle trees in Brownson Creek, and the lining and placement of 12 whole trees into Big Creek, and 12 whole trees and portions of other trees into Slide Creek.

The design features listed for the Aquatic Habitat Enhancement portion of the projects in the Environmental Assessment are accepted as described therein, including seasonal restrictions to minimize disturbance to possible nesting Marbled Murrelets or Northern Spotted Owls.

Rationale for Decision:

The proposed action is selected for the following reasons:

1. The proposed Action will restore large woody structure to selected portions of Bear Ben, Brownson, Big, and Slide Creeks. The addition of wood will moderate streamflows, increasing habitat abundance and complexity. This action may increase populations of petitioned and proposed fish stocks, helping to reduce the possibility of listing under the Endangered Species Act, or reduce the amount of time the species are on the list, if listing proceeds.
2. No additional significant issues were identified during the public comment period for this project.

Monitoring:

Compliance and effectiveness monitoring will be performed as detailed in the Proposed Action of the EA. Methods will include inspections during the construction phase of various portions of the Proposed Action, period inspections of project sites by affected resource specialists, and short- and long-term monitoring of aquatic habitat.

Area Manager
Myrtlewood Resource Area

Date

Decision Record
for
Riparian Restoration Projects
within the Middle Fork Coquille Watershed
EA OR 128-98-12

Decision:

My decision is to adopt the Proposed Action, Riparian Restoration projects as described and analyzed in the Environmental Analysis (EA) for the Middle Fork Coquille River Watershed. Projects include the silvicultural treatment of approximately 20 acres of riparian habitat along Brownson, Big, and Slide Creeks and along the Middle Fork Coquille River to re-establish native forest composition.

The design features listed in the Environmental Assessment are accepted as described therein, including seasonal restrictions to minimize disturbance to possible nesting Marbled Murrelets or Northern Spotted Owls.

Rationale for Decision:

The proposed action is selected for the following reasons:

3. The proposed Action will implement silviculture projects intended to increase the rate at which native riparian forests are re-established in disturbed riparian areas. The enhanced stands will provide forage and habitat for diverse wildlife species as well as provide the stream system with shade, organic material, and a future supply of large wood required for productive aquatic habitat.
4. No additional significant issues were identified during the scoping period for this project.

Monitoring:

Compliance and effectiveness monitoring will be performed as detailed in the Proposed Action of the EA. Methods will include inspections during the construction phase of various portions of the Proposed Action, period inspections of project sites by affected resource specialists, and short- and long-term monitoring of riparian habitat.

Area Manager
Myrtlewood Resource Area

Date

ENVIRONMENTAL ASSESSMENT OR 128-98-12

A Proposal to Conduct Watershed Restoration Projects
in the Middle Fork Coquille Watershed

Prepared by:

M. Jo Christensen, Fishery Biologist/Team Lead
Mike Cook, Silviculturalist
Steve Langenstein, Wildlife Biologist
Mike Rodriguez, Natural Resource Specialist
Rod Smith, Engineer

Technical support by:

Dan Carpenter, Hydrologist
Kevin McCabe, Soils Specialist
Bruce Rittenhouse, Botanist
Stephen Samuels, Archaeologist
Tim Votaw, Hazardous Materials Specialist

This action is subject to and in conformance with the *Coos Bay District Record of Decision and Resource Management Plan*, dated May 1995, and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* with its *Record of Decision and Standards and Guidelines* (Interagency, 1994).

SECTION I

Purpose and Need for Action

Purpose and Need

The Bureau of Land Management (BLM), in conjunction with other Federal land agencies, is directed to conduct watershed analysis and restoration projects to aid in the recovery of water quality and aquatic, riparian, and terrestrial habitats. This direction comes from the *Coos Bay District Final Proposed Resource Management Plan and Environmental Impact Statement* (RMP) and the accompanying *Record of Decision* (BLM, May 1995), and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, February 1994) (FSEIS; Northwest Forest Plan), its *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, and accompanying *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, April 1994). This Environmental Assessment (EA) is tiered to both documents.

Watershed Assessments and Analyses have been conducted for the Middle Fork Coquille Analytical Watershed (BLM 1994) and Sandy-Remote Watershed (BLM 1996), and the Big Creek Watershed (BLM 1997). A draft Late-Successional Reserve (LSR) Assessment (BLM 1998) is currently under review by the Regional Ecosystem Office. The proposed projects are among several identified, and are in conformance with the Aquatic Conservation Strategy (ACS) objectives as described in the Standards and Guideline of the Northwest Forest Plan. The watershed analyses and LSR Assessment are hereby incorporated by reference.

The Myrtlewood Resource Area proposes to implement projects addressing instream and riparian habitat. The goals of the projects are to:

- ✧ enhance aquatic habitat in streams that have been impacted by salvage and stream-cleaning, and,
- ✧ restore native riparian plant communities that have been impacted by salvage and timber-harvest.

The purpose of this EA is to:

- ✧ assess potential impacts that may result if the Proposed Action or any alternative is implemented,
- ✧ identify appropriate mitigation measures, and
- ✧ document the decision-making process involved in proposed projects.

The decision to be made regarding this EA is to either:

- ✧ Not implement the projects (No Action Alternative), or
- ✧ Implement the projects as described in this document (Proposed Action).

Issues, Concerns, and Opportunities

Inventories of riparian vegetation, down logs, and instream habitat in the Middle Fork Coquille watershed provided the basis for developing these project-specific proposals. Additional issues, concerns, and opportunities were identified by the interdisciplinary team (IDT) assigned to develop the restoration projects. Individual summary reports from IDT specialists are contained in the Analysis File for this EA, hereby incorporated by reference.

Issue 1: Riparian Habitat

Riparian areas throughout the watershed have been impacted by logging, freshets associated with splash dams, road-building, and substantial reduction/limitation of beaver populations. Conifers and longer-lived hardwoods (such as Oregon ash, myrtle, and big-leaf maple) have been eliminated or replaced in many areas and subsequently, riparian zones are currently dominated by red alder and other small-stemmed hardwoods. In some cases, native plant species have been replaced by exotics and escaped cultivars (such as Himalayan blackberry). Removal of large conifer trees and down logs in riparian zones within the watershed has resulted in diminished levels of large woody material in riparian zones, streams, and a subsequent loss of fish and wildlife habitat.

Issue 2: Aquatic Habitat

Throughout the Middle Fork Coquille watershed, intensive logging, salvage, snag removal, stream-cleaning, and road building reduced inputs of large wood, resulting in loss of instream complexity. Splash dams and water transport of logs eliminated large roughness elements (boulders, logs, beaver dams), resulting in channel down-cutting, sedimentation, aquatic habitat simplification, etc. Simplification of aquatic habitat reduces abundance and taxonomic diversity of all aquatic and some terrestrial organisms as well as eliminates the capacity of streams to retain organic material, an important food source for aquatic macroinvertebrates and a major component of aquatic food webs (Murphy and Meehan 1991).

Geographical Area

The Middle Fork Coquille watershed encompasses almost 310 square miles. The Big Creek and Remote subwatersheds comprise approximately 26 and 17 square miles, respectively. Most of the proposed projects would occur on land or roadways presently managed and controlled by the BLM. One project will be implemented on privately-owned lands. This project will be conducted in cooperation with associated landowners and the Coquille Watershed Association, and under the legal authority of the Wyden Amendment. The planning area is shown on maps contained in Appendix I.

Permits, Licenses, and Entitlements Necessary to Implement the Projects

BLM personnel involved with the planning and implementation of enhancement projects will obtain all permits necessary for the proposed actions, including the the *General Authorization for Fish Habitat Enhancement* (Rule 141-89-005 pursuant to ORS 196.850). No licenses or entitlements are needed/required for these projects.

Section II

Alternatives Including the Proposed Action

This section describes the alternatives by project type.

RIPARIAN RESTORATION

No Action Alternative

Under this alternative, no riparian restoration projects would be carried out.

Design Features for Threatened and Endangered (T&E) Species

No design features to reduce effects on T&E species.

Design Features for Port-Orford Cedar (POC) Root-Rot

No design features to reduce the spread of POC Root-rot.

Monitoring

None

Proposed Action Alternative

These riparian silviculture projects seek to restore native riparian plant communities through silvicultural treatments in several locations throughout the watershed (Table 1 and Appendix 1). The projects were designed by an interdisciplinary team consisting of an natural resources specialist, botanist, wildlife biologist, silviculturalist, and fishery biologist. The primary long-term goal of these projects is to restore, to the extent possible, the multi-layered mixed conifer/hardwood riparian forest that existed prior to human-caused disturbance. Such a forest would provide riparian biota with vertical habitat structure as well as down woody material necessary for riparian and aquatic ecosystem function.

The pre-disturbance state was determined from historic aerial photos and field reconnaissance, including assessment of riparian geomorphology, existing vegetation, snags, and stumps. Complete description of pre-disturbance condition for project sites is contained in the Project File (hereby incorporated by reference). Approximately 20 acres of riparian forest are proposed for treatment along Big, Brownson, and Slide Creeks, and the Middle Fork Coquille River. Implementation of the projects will involve a combination of some or all of the following: girdling or falling of existing trees, removal of underbrush, and planting of native species including western red-cedar, western hemlock, Douglas-fir, bigleaf maple, myrtle, Oregon ash, and vine maple (specific design features are outlined in Table 1 and in Appendix 2). Equipment generally consists of chainsaws with a crew size of 4-6 persons and a production rate of ½ to 1 acre per person per day. To ensure survival of planted trees, projects may require multiple treatments

and follow-up maintenance for up to 30 years following initial treatment. Follow-up treatment will be applied as needed and may include one or more of the following activities: additional manual clearing of underbrush, cutting/pruning of resprouted hardwoods, additional conifer tree release from retained hardwoods. Annual treatment for at least three years and at least t least three separate treatments over the next five to 30 years are anticipated to avoid mortality of planted trees due to shrub and hardwood competition.

All riparian restoration projects are located on BLM lands with the exception of one treatment unit in Slide Creek (SLID 01-R), which is located on private land and immediately adjacent BLM land. This project will be carried out with the cooperation of the landowner, under the auspices of the Coquille Watershed Association and the legal authority of the Wyden Amendment.

Monitoring

Most compliance monitoring would be performed by the BLM's Project Inspector for the ensuing contract, ensuring compliance with contractual stipulations (including design features). If a problem arises due to adverse environmental impacts, the problem will be brought to the attention of the Contracting Offiicer's Representative and the appropriate resource specialist. A variety of options exist to remedy problems, including contract changes, new mitigation measures, and cessation of the contract. During the contract, the project sites will be periodically reviewed by resource specialists.

Additionally, the following monitoring will occur (contingent on available funding):

- # Stream buffers will be monitored to determine if pre-treatment canopy cover was retained above channel.
- # Sites will be monitored for changes in canopy cover until the planted trees are established.
- # At least annual review of competition and survival within the treatment units will be conducted to determine which specific actions will be implemented during Annual Maintenance.
- # Planting success and subsequent treatment needs will be assessed using BLM Stocking survey methods contained in BLM Manual 5705 - Regeneration Stocking Surveys or an adaptation of this method designed specifically to evaluate Riparian Silviculture. After approximately 30 years, when the planted conifers have emerged above the hardwood canopy, monitoring will end.

Design Features for T&E Species

Various restrictions (including seasonal and daily time limits) are directed by the mandatory Terms and Conditions or Conservation Recommendations resulting from Endangered Species Act Section 7 Consultation with the U.S. Fish and Wildlife Service, available at the Coos Bay District Office of the BLM, hereby incorporated by reference. See also Appendix 3. Appropriate NEPA compliance and ESA Sec. 7 consultation will be conducted for any subsequent disturbance (i.e., maintenance) associated with the proposed projects.

Design Features for Port-Orford Cedar (POC) Root-Rot

Prevention of the spread of Port-Orford Cedar Root Rot (*Phytophthora lateralis*) has been identified as a special management concern on the Coos Bay District B.L.M. Port-Orford cedar is present in the Big and Remote subwatersheds as well as along the M. Fk. Coquille River. However, because no Port-Orford cedar are located in riparian restoration project areas and because these projects do not require the use of heavy equipment, no design features for POC root-rot have been incorporated.

Table 1. Locations and Summary Descriptions of Proposed Riparian Silviculture Treatment Units.

Detailed description of treatment contained in project. Abbreviations: DF=Douglas-fir; RC=western red cedar; HEM=western hemlock; RA= red alder; MYR=Oregon myrtle; BLM=big-leaf maple; VM=vine maple; SB=salmonberry; BB=Himalayan blackberry; EB=elderberry; SW=sword fern

Unit #	Site Preparation	Planting	Maintenance
Middle Fork Coquille River (T29S-R10W-29)			
MFCO 01	Girdle or fell all RA within 50' radius of DF's. Girdle existing DF to 25'x25' spacing.	none	none
MFCO 02	Girdle all RA within 50' radius of middlestory conifers	none	none
Slide Creek -(T29S-R10W-33)			
SLID 01-L	Brush entire unit including BB within stream buffer; pile/burn BB. In vicinity of middlestory conifers, girdle ~3/4 of RA to release conifers.	In RA-dominated areas with no mid-story conifers, 3:1:1 BLM, RC, HEM. Place protective tubes on existing RCs and HEMs at 20'x20'.	Brush BB 3X /yr. for 3 yr; remainder of site 1X /yr. for 3 yr.
SLID 02-L	Girdle or cut several stems from each multiple-stem MYR clump, leaving ≥ 1 main stem.	2:1:1 15'x15' DF, RC, HEM in created canopy gaps.	Brush if necessary. Cut MYR sprouts and new branches until planted trees emerge above MYR canopy.
SLID 01-R	Brush entire unit, inc. BB w/in stream buffer; pile/burn BB. Girdle ~3/4 of RA to release conifers. At periphery of wetland, girdle only 1/2 of RA.	3:1:1 25'x25' BLM, RC, HEM Adjacent wetland, 1:1 RC, HEM. In BB area near stream, 15' X 15' MYR in open areas. 10' x 10' VM under existing canopy. In large BB area, 15' x 15' DF.	Brush BB 3X /yr. for 3 yr.; remainder of site 1X /yr. for 3 yr. In 3 yrs., reduce spacing of surviving released conifers to 25'x25'. Thin 15'x15' DF to 30'x30' 3 yrs after canopy closure.
SLID 02-R	Girdle or cut (near road) all RA. Brush entire unit. Thin existing conifers to 30'x30' spacing.	none	none
Big Creek - (T29S-R11W-11)			
BIG 01-L	Release existing conifer by cutting RA <6"; girdle RA > 6'	none	

Table 1, Continued

Unit #	Site Preparation	Planting	Maintenance
Brownson Cr. (T29S-R11 W-22)			
BROW 01-L	Brush unit; pile/burn BB. Girdle or cut several stems from each multiple-stem MYR clump, leaving ≥ 1 main stem.	2:1:1 25'x25' DF on hill slope: RC and HEM in created gaps.	Brush BB 3X /yr. for 3 yrs.; SB, once 2nd or 3rd yr., or as necessary.
BROW 02-L	Girdle/cut (near road) ~3/4 of RA. Brush entire unit. Girdle/cut several stems from each multiple-stem/ clump, leaving ≥ 1 main stem.	3:1:1 25' x 25' DF (hill slope),RC, HEM near bottomland. Plant MYR in grassy area to shade creek, and VM on eroding bank.	Brush SB once/yr. for 3 years; BB 3X / y for 3 yr.
BROW 03-L	see BROW 02-L	3:1:1 25' x 25' DF (hill slope), RC, HEM near bottomland.	Brush SB once/yr. for 3 yr.

BROW 04-L	see BROW 02-L	see BROW03-L	Brush SB once/yr. for 3 yr.
BROW 01-R	Brush ~1/3 unit, near road. Girdle/cut (near road) all RA. Girdle/cut several stems from each multiple-stem MYR clump, leaving \geq 1 main stem.	3:1:1 20' x 20' DF, RC, HEM in created canopy gaps.	Brush near road every year; elsewhere, 2nd or 3rd year. Brush MYR sprouts and new branches until planted trees emerge above MYR canopy.
BROW 02-R	see BROW01-R	see BROW 01-R	Brush near road every year, elsewhere, 2nd or 3rd year. Cut MYR sprouts and new branches until planted trees emerge above MYR canopy.
BROW 03-R	Brush entire unit. Girdle or cut (near road) all RA. Girdle or cut several stems from each multiple-stem MYR clump, leaving \geq 1 main stem. Thin existing pole-size conifers to ~30' x 30' spacing.	1:1:1 20' x 20' DF, RC, HEM in created canopy gaps.	Brush as necessary up to once/yr. for 3 years. Cut MYR sprouts and new branches until planted trees emerge above MYR canopy.

AQUATIC HABITAT RESTORATION- PART I

Cull Log and Myrtle Tree Placement

No Action Alternative

Under this alternative, no restoration projects would be carried out.

Design Features for T&E Species

No design features to reduce effects on T&E species would be needed, as no activities would occur.

Design Features for Port-Orford Cedar (POC) Root-Rot

No design features to reduce the spread of POC Root-rot.

Monitoring

Stream habitat inventories would be repeated each decade to monitor long-term changes in habitat condition.

Proposed Action Alternative

These projects seek to place cull logs and whole myrtle trees in aquatic and riparian habitats in Bear Pen and Brownson Creeks in the Big Creek watershed (Table 2 and Appendix 1). The projects were designed by an interdisciplinary team consisting of fishery and wildlife biologists, hydrologist, and a natural resources specialist. The primary goal of these projects is to restore large down wood to aquatic and riparian ecosystems along Bear Pen and Brownson Creeks.

Bear Pen and Brownson Creeks are considered excellent candidates for addition of large wood due to their channel characteristics and subsequent likelihood that wood additions will improve habitat quality and abundance. The channels in the reaches are proposed for treatment are considered suitable for large wood placements because they are Rosgen Channel-types B and C, and have relatively low average gradients (0.5-2%). Although abundance of existing large wood in the streams is very low, in the few places where wood exists, there is generally good rearing habitat for fishes, indicating that wood additions can be expected to improve habitat quality and abundance for these species. Additionally, because the floodplain/riparian area is extremely deficient in coarse wood debris, additions of large Decay-Class 1 logs will improve habitat for species such as birds and small mammals which depend on these structures for foraging and cover habitat.

We propose to place 39 cull logs in 10-15 sites in Bear Pen Cr. and on its floodplain, and 53 cull logs in 19-23 sites in Brownson Cr. and on its floodplain. The logs range from 30-40 ft. in length and from 13-28" diameter (large end). After delivery to the site, they will be placed at 2-5 decking sites along the Brownson Cr. road (29-11-11.0) and 1-2 sites along the Bear Pen Cr. road (6.0 spur off 29-11-28.0). After decking, teams of draft horses (2-4 horses/team) will be used to transport logs from the decking sites to the stream channel and adjacent riparian area. Implementation will be in FY's 1998 and 1999, in accordance with timing restrictions described in Appendix 3.

The Bear Pen Cr. project reach is located approximately 150' downslope from the Bear Pen Cr. road and

is not accessible via this road; however, direct access is available via a small 1950s-era road located along the edge of the floodplain throughout the project reach. Logs will be lowered/slid approx. 150' downslope from the Bear Pen Cr. Rd. to the old riparian road. Horse teams will then move the logs (either using a small cart or by skidding) up to 1,500' down the old road, and store them in small decks close to the project sites. The logs will then be pulled across the floodplain (for distances up to 75') on designated haul routes and placed in the stream channel and in the riparian zone using cables and blocks.

Unlike Bear Pen Cr., Brownson Cr. is accessible by paved roads throughout the entire project reach. Horse teams will transport the logs from roadside decks to the stream on designated haul routes. Logs will be placed in the stream using cables and blocks.

In addition to placing cull logs in the stream channel and riparian zone, we propose to "tip" 3 live myrtle trees adjacent to Brownson Cr. ("Tipping" consists of pulling over a live tree by the roots using a horse team, cable, and block-and-tackle). Part of the root structure of the trees will be left intact, leaving the trees to serve as "living structures" over the stream channel. This action seeks to emulate several other myrtle trees in the project area which have "tipped over" naturally above the stream channel and are continuing to grow from a horizontal position, providing shade and structure to the stream.

See Table 2 for a detailed description of features for the cull-log and whole myrtle tree placement projects proposed for Brownson and Bear Pen Creeks.

Monitoring

Most compliance monitoring would be performed by the BLM's Project Inspector for the ensuing contract, ensuring compliance with contractual stipulations (including design features). If a problem arises due to adverse environmental impacts, the problem will be brought to the attention of the Contracting Officer's Representative and the appropriate resource specialist. A variety of options exist to remedy problems, including contract changes, new mitigation measures, and cessation of the contract. During the contract, the project sites will be periodically reviewed by resource specialists.

A fish habitat and riparian large woody debris inventory conducted in 1995 (pre-project) will be repeated in 1999 (post project) and in the subsequent 1-3 years following the project to determine if the action resulted in the desired effects. Stream habitat inventories will be repeated each decade to monitor long-term changes in habitat condition. Permanent photopoint monitoring stations have been established on project streams and this monitoring will continue indefinitely every 2-3 years to record changes in channel conditions. Additionally, in Bear Pen Cr., permanent stream bed profile monitoring sites were established one year prior to project implementation. Changes in streambed elevation and channel profile will be monitored periodically.

Design Features for T&E Species

Various restrictions (including seasonal and daily time limits) are directed by the mandatory Terms and Conditions or Conservation Recommendations resulting from Endangered Species Act Section 7 Consultation with the U.S. Fish and Wildlife Service, available at the Coos Bay District Office of the BLM, hereby incorporated by reference. See also Appendix 3. Appropriate NEPA compliance and ESA Sec. 7 consultation will be conducted for any subsequent disturbance (i.e., maintenance) associated with the proposed projects.

Design Features for Port-Orford Cedar (POC) Root-Rot

Prevention of the spread of Port-Orford Cedar Root Rot (*Phytophthora lateralis*) has been identified as a special management concern on the Coos Bay District B.L.M. Port-Orford cedar is present in the Big and Remote subwatersheds as well as along the M. Fk. Coquille River. However, because no Port-Orford cedar are located in riparian restoration project areas and because these projects do not require the use of heavy equipment, no design features for POC root-rot have been incorporated.

Table 2 Design Features for Cull-Log Placement Projects

<u>Activities</u>	<u>Design Features</u>
1. Establishment of 60' X 60' horse camps along Bear Pen & Brownson Cr. Roads	
-removal of brush to establish camp	-obtain botany clearance prior to brushing camp area
-feeding of grain to horses	-feed in nosebag to reduce spillage; use locally-grown feeds to avoid introducing
-accumulation of horse manure in camps	-regular clean-up of manure; place in barrels to be disposed of properly.
-compaction of soil in horse camps	-after completion, subsoil and re-plant with approved forb/grasses mix; cover s
2. Transfer of cull logs from Bear Pen Rd. deck to old riparian road	
-removal of brush to establish 150" skid trail from road to stream	-obtain botany clearance prior to brushing trail
-disturbance, compaction of soil	-restrict skidding to established areas; following project, subsoil and replant wi mix; cover seed with straw.
3. Skidding of logs along old Bear Pen Cr. Road to project sites	
-removal of low brush to clear trail	-obtain botany clearance prior to brushing trail
-removal of obstructions (down wood)	-manually or using horses, slide obstructing logs off trail; do not remove from as directed by wildlife biologist
-compaction of soil	-soil already compacted due to existing road and heavy use by big-game
5. Horse teams working on floodplain	
-disturbance to riparian vegetation	-restrict passing and hauling to designated routes to minimize extent of impact
-compaction of riparian soils	-restrict passing and hauling to designated routes
-presence of manure on floodplain	-clean as necessary? Remove or bury minimum of 1 foot soil coverage on top

Table 2, continued

<u>Activities</u>	<u>Design Features</u>
6. Installation of instream structures	
-damage to blocked trees	-protect trees with collars
-disturbance to streambank soils as horses cross stream, logs pulled across stream	-restrict passing and hauling to designated routes; do not use areas with steep elevate logs over steep/unstable streambanks
-disturbance to streambank vegetation	-restrict stream crossings to minimize extent of impacts
-selection of sites	-sites selected for placement based on channel shape, presence of natural and likelihood of the site to retain wood

-anchoring of logs	-key logs to natural anchor points (large standing trees, rock-outcroppings, etc) each log will be retained on floodplain to prevent substantial movement. Some logs will be temporarily retained with hemp rope until an anchor matrix (sediment, debris) is expected to decay in 2-3 years. We anticipate some adjustments to structures due to stream gradient, channel sinuosity, and demonstrated capacity of stream. Logs are not expected to be transported from project reach.
-design of structures	-logs will be placed singly and in groups of 2-4 logs. Arrangement of logs is determined by size and function of existing wood in the channel.
-protection of streambanks	Avoid wood placement resulting in channel constriction or direction of flow age. Brownson Cr, use only occasional pieces with only one end in channel, or use
6. Selection of myrtle trees to be “tipped”- Brownson Cr.	-retain trees containing cavities or other wildlife habitat features, as directed by wildlife biologists -retain trees contributing more than 25% of canopy cover above stream
7. Placement of riparian down wood	
-selection of sites	-locations were selected by wildlife biologists
8. Timing of work	-see Appendix 3

AQUATIC HABITAT RESTORATION-PART 2

Whole Tree Placement

No Action Alternative

Under this alternative, no restoration projects would be carried out.

Design Features for T&E Species

No design features to reduce effects on T&E species would be needed, as no activities would occur.

Monitoring

Stream habitat inventories would be repeated each decade to monitor long-term changes in habitat condition.

Design Features for Port-Orford Cedar (POC) Root-Rot

No design features to reduce the spread of POC Root-rot.

Proposed Action Alternative

These projects seek to add large down wood to aquatic and riparian habitats along Big and Slide Creeks (Table 3 and Appendix 1). Although current habitat is poor, the reaches proposed for treatment have the potential to provide better habitat for aquatic and riparian organisms with the addition of large wood to both the channel and floodplain. These reaches are characterized by moderate gradient (average of 2%), moderate sinuosity, and contain several unconstrained sections bordered by a floodplain. The projects were designed by an interdisciplinary team consisting of fishery and wildlife biologists, a silviculturalist, and a natural resources specialist. The primary goal of these projects is to restore large down wood to aquatic and riparian ecosystems along Big and Slide Creeks.

We propose to line whole trees and portions of whole trees into the stream channel and the Riparian Reserve along Big and Lower Slide Creeks ("Lining" consists of using a yarder and cable to pull a live tree at its roots, followed by pulling the whole tree, including rootwad, or a portion of tree, into the stream channel).

Big Creek: twelve trees will be lined from the Riparian Reserve from both sides of the channel.

Slide Creek: three trees will be lined from the project area Riparian Reserve. Additional trees will be lined from other locations in the watershed, trucked to the project reach, and yarded into the stream channel. See Appendix 4 for tree selection criteria and Table 3 for a detailed description of design features for these projects.

Design Features for T&E Species

Various restrictions (including seasonal and daily time limits) are directed by the mandatory Terms and Conditions or Conservation Recommendations resulting from Endangered Species Act Section 7 Consultation with the U.S. Fish and Wildlife Service, available at the Coos Bay District Office of the BLM, hereby incorporated by reference. See also Appendix 3. Appropriate NEPA compliance and ESA Sec. 7 consultation will be conducted for any subsequent disturbance (i.e., maintenance) associated with

the proposed projects.

Design Features for Port-Orford Cedar (POC) Root-Rot

No Port-Orford Cedar has been found in the project area; however, as a precaution, heavy equipment associated this project will be washed prior to entering the watershed as specified in the BLM Port-Orford Cedar Management Guidelines (hereby incorporated by reference).

Monitoring

Monitoring will be conducted as described above (Part I-Cull Log and Myrtle Tree Placement).

Table 3. Design Features for Tree-Lining Projects. See Appendix 3 for timing of work.

<u>ACTIVITIES</u>	<u>DESIGN FEATURES</u>
1. Tree selection- -Big Cr. -Slide Cr.	- see Appendix 4 - 12 Douglas-fir trees selected from Riparian Reserve <i>-Riparian Reserve:</i> 3 Douglas-fir trees <i>-Matrix:</i> 3 Douglas-fir trees selected from a spur road construction corridor (7.1 spur off the 29-10-33.0 road) on the Sandy Remote timber-sale <i>-LSR:</i> up to 6 trees from along an existing road corridor (33.0 and 33.1 spurs off the 29-10-33.0 rd)
2. Lining of trees -preparation of trees -use of yarder -use of cables and blocks -lining path	--water will be pumped from creek to loosen soil and roots prior to lining. Hose intake will be screened to prevent fish from entering intake. -yarder required to stay on road or pullout surface; use warning signs and flaggers on roads to insure motorist safety; keep traffic delay to minimum -protective sheathes (rubber tires or equivalent) will be placed around anchor trees; re-spool cable where there is high potential to damage standing trees, monuments, or cultural artifacts. -avoid damage to standing trees, snags, Decay Class 1 down wood, and other habitat features as indicated by wildlife biologist. In Slide Cr, trees # 1 & 2 will be lined downhill to avoid adverse impacts to potential Marbled Murrelet nesting habitat
3. Yarding of trees -yarding path -disturbance to soil	-avoid damage to habitat features (standing trees, snags, down wood, etc) as indicated by wildlife biologist. -when possible partially suspend logs during yarding; replant disturbed soil with approved vegetation.
4. Installation of trees in channel -selection of sites -design of structures -anchoring of logs	-sites selected based on channel shape, presence of natural anchor points, and apparent likelihood of site to retain wood; sites will be spaced 100-500 ft apart. -each site consists of 1-3 whole trees pulled towards the stream to form a loose accumulation; trees will be lined so that fallen trunk lands in active channel with a portion of the tree suspended above the channel and on the bank; trees and logs will be positioned at the most stable angle for the site (usually 30-90° from downstream channel edge). -no anchors would be used because tree lengths including rootwad will be 2-3 times active channel width and approximately 75% of tree will be on bank

SECTION III

Affected Environment

This section describes the environmental components that could be affected by the Proposed Action, if implemented. This section does not address the environmental effects or consequences, but rather serves as the baseline for the comparisons in Section IV - Environmental Consequences.

The proposed action will occur in various locations within the M. Fk. Coquille watershed as shown on the project location maps in Appendix 1.

The affected environment is associated with Riparian Reserves (streams and riparian zones), Matrix lands (upslope lands managed for timber harvest) and Late-Successional Reserves in the Middle Fork Coquille Watershed. For a more detailed description of these components, as well as descriptions of historic composition and function of project-area ecosystems, see the Northwest Forest Plan (Interagency 1994) and relevant Watershed Analyses (BLM 1994, 1996, 1997, and 1998).

Cultural Resources

The Middle Fork Coquille River area is within the reported aboriginal territory of the Coquille Indian Tribe. The tribe has expressed continuing interest in the area; however, no known traditional religious sites are located within the project area. Likewise, there are no known prehistoric archeological sites in the immediate vicinity of the project areas.

Although there are no known cultural resources having the potential to be impacted by this project, if any are encountered during operations, all work in the vicinity will stop and the district Archaeologist notified immediately.

Aquatic Habitat

Historically, streams throughout the Middle Fork Coquille watershed (including Slide and Big Creeks) were characterized by large amounts of coarse woody debris (both in aggregations and single pieces). This wood originated from adjacent riparian zones and hillslopes in late-seral condition, landslides and debris torrents. The role of large wood in stream ecosystem function and aquatic/riparian species diversity has been well documented (Sedell and Frogatt 1984, Murphy and Meehan 1991).

Aquatic habitat throughout the Middle Fork Coquille watershed and the Slide and Big Creek subwatersheds has been affected by decades of agriculture, logging, salvage, road and railroad construction, removal of woody structure from stream channels. Recent stream habitat inventories indicate that Big, Slide, Brownson, and Bear Pen Creeks are deficient in large woody structure (reports on file in Myrtlewood Resource Area).

Bear Pen and Brownson Creeks are 4th-order tributaries of Big Cr. Both receive heavy spawning use by anadromous fish (particularly coho); however, although pools are present in both streams, the complex pools which provide overwintering habitat for anadromous and resident fish species are scarce or non-existent. Past harvest and salvage have removed standing and down conifers from the riparian zone, reducing amounts of down wood and snags which provided habitat for fish and wildlife. An extensive riparian road network blocks inputs of large down wood to channels and riparian zones from adjacent tributaries during debris torrents. As a result, there is a low likelihood of large wood recruitment to aquatic and riparian ecosystems along these streams.

Big and Slide Creeks are 5th order tributaries of the M. Fk. Coquille River. In the reaches proposed for

treatment in both streams, habitat conditions for aquatic biota are poor-to-moderate. There are no complex pools in the project reaches and the channel contains no large-diameter down conifer wood. As a result, these reaches provide no winter habitat for fishes or other aquatic organisms requiring low-velocity habitats (such as invertebrate detritivores and some amphibians). These reaches are used for spawning by chinook and coho salmon and steelhead trout; however, lack of velocity-check structures have resulted in the elimination of gravel substrates.

Riparian Communities and Habitat

Natural upland riparian communities in the Middle Fork Coquille watershed were found in the more constrained tributaries of the mainstem, including Slide and Big Creeks. Here, natural overstory vegetation was historically dominated by Port-Orford cedar, western redcedar, western hemlock, Douglas-fir and grand fir, with an understory of red alder, bigleaf maple, and Oregon myrtle, vine maple, willow, thimbleberry, huckleberry, salmonberry, elderberry and others. This riparian forest contributed large amounts of down wood to the forest floor and stream channel, stabilizing streambanks and floodplains, and providing cover for riparian-dependent biota. Diverse communities of riparian organisms including herptiles, invertebrates, and mammals spent part or all of their life cycle in riparian areas while upland species also used the area for foraging, resting, and dispersal.

Today, after several decades of road construction and riparian harvest, abundance and diversity of upland riparian vegetation is substantially lower. As a result, these areas currently are dominated by hardwoods (primarily red alder), younger-aged stands of conifer, and exotic species such as Himalayan blackberry. Riparian areas are also deficient in coarse down wood (due to reductions in inputs as well as removal of existing pieces). Decreased amounts of down wood has reduced the capacity of riparian zones and floodplains to moderate stream flow, stabilize streambanks and store sediments. As a result, many stream channels in these areas are downcut and historic floodplains are disconnected from the water table.

Although they currently function in a reduced capacity, these upland riparian forests are part of the Riparian Reserve system established in the Northwest Forest Plan. Under this plan, these areas are intended to protect the health of the aquatic system, its dependent species, as well as enhance conservation for organisms dependent on the transition zone between upslope and riparian areas, provide travel corridors for terrestrial animals and plants, and provide for greater connectivity of late-successional forest habitat.

Late-Successional Habitat

Late successional habitat in the M. Fk. Coquille watershed is generally associated with stands greater than 80 years old. The structure, composition and associated biota of late-successional and old-growth forest ecosystems has been described in detail elsewhere (Franklin et al. 1981). In the M. Fk. Coquille watershed, an 1868 fire burned a majority of the vegetation, resulting in a current abundance of stands 100-200 years old and the scarcity of older late-successional forests. The abundance of late-successional habitat has also been substantially reduced after over a century of logging, salvage, road construction, agriculture, and human-caused fires,

Late-successional habitat currently exists in Riparian Reserves along Big Cr. and in some areas along Lower Slide Cr. and in the Upper Slide Cr. watershed LSR.

The Big Cr. Riparian Reserve contains many of the elements associated with late-successional habitat, including structural diversity, presence of numerous snags, and large, old trees. The stand contains a mix of conifers (Douglas-fir, western hemlock, western redcedar) and hardwoods (myrtle, bigleaf maple). There are numerous snags present and a variety of coarse down logs. There are moss-covered talus slopes. The Slide Cr. Riparian Reserve is likewise characterized by structural diversity as well as a diverse assemblage of tree species and ages.

Unlike the Big and Slide Cr. Riparian Reserves, the stand proposed for tree-lining in the Slide Cr. LSR contains few elements characteristic of late-successional habitat. The stand was burned at the turn of the century and is 80-100 years old. Stem density is high while structural diversity is low (there is a single canopy level). There are few large, "limby" trees present. A few snags are present (mostly small diameter) although recruitment of larger snags would be expected in the future. This stand is not considered suitable habitat for Marbled Murrelets.

Aquatic, Riparian, and Terrestrial Species (including T&E)

Thirteen species of fish, at least 13 species of amphibians, eight species of reptile, about 40 species of mammals, and numerous bird species are thought to use the aquatic and riparian habitats in the Sandy-Remote and Big Cr. subwatersheds, and the reach of the M. Fk. Coquille river affected by the proposed project for all or part of their life cycle and therefore have the potential to be affected by the Proposed Actions (see BLM 1996 and 1997 for species lists). In addition to species such as fishes and macroinvertebrates which spend their entire life in the aquatic environment, a large number of terrestrial species which potentially use the watershed for part or all of their life cycle and have the potential to be affected by the Proposed Actions. These include at least ten species of bat, nine species of raptors, more than 40 species of mammals, and numerous passerine bird species. No surveys for mollusks have been conducted but it is expected that several species of aquatic and land snails and slugs occur throughout the watershed. Many of the vertebrate species move extensively through and within the watershed and regularly move from terrestrial habitats to riparian/aquatic habitats.

There are no known federally *listed* threatened or endangered wildlife or fish species occurring within any project area. Coho salmon (candidate-threatened), coastal cutthroat trout (candidate-threatened), steelhead trout (proposed-threatened), and Pacific lamprey (Species of Concern) are found in project reaches. Additionally, there is a possibility that these sites do or will in the future, provide habitat for up to 25 special status wildlife species. This group of species are those which are currently considered federally endangered, threatened, species of concern, Bureau sensitive, tracking or assessment, State endangered, threatened, or sensitive and under the Northwest Forest Plan are considered either survey and manage or protection buffer species.

Botanical Resources (including special status species and noxious weeds)

No special status plant species or habitat is known to occur within the proposed project areas. No occurrences of these species are known within the area, and since these stands appear to be marginal habitat, the potential impact is low.

Port-Orford cedar is found in the watershed; however, no trees were found in or close to proposed project locations.

Noxious weeds are present throughout the watershed with species of most concern being Scotch broom, French broom, and gorse. Scotch and French broom occur along the roadsides, and are most common in the lower portion of the watershed. Therefore, they are a potential seed source in scattered locations to infest the rest of the area.

Soils

Geologic units in the Big Creek, Slide Creek and M. Fk. Coquille project areas are: Quarternary Alluvium (all areas excluding NE part of Big Cr. in-stream restoration, SW part of Slide Cr. stream restoration area, and M. F. Coquille project); and Lookingglass formation (includes the excluded areas of Quarternary Alluvium). Quarternary Alluvium is unconsolidated deposits of gravel, sand, silt and clay in flood plains and stream channels. The Lookingglass formation is interbedded sandstone and siltstone weakly resistant to erosion.

Soil associations in the Big Creek project area are: Digger-Preacher-Umpcoos on 50-80% slopes, Preacher-Blachly-Digger on 30-60% slopes, and Preacher-Bohannon loams on 60-90% slopes. These soils are moderately deep to deep, well drained loams and gravelly loams that occur mostly over soft or fractured sedimentary rock. The exceptions are the shallow Umpcoos soils and the deep Blachly silty clay loams. In the Slide Creek project area the soil associations are: Digger-Preacher-Umpcoos on 50-80% slopes, and Kirkendall silt loam. The Digger-Preacher-Umpcoos is the same as described for Big Cr. Kirkendall is on flood plains, and is deep and well drained. In the M F Coquille project area the association is Digger-Preacher-Umpcoos on 50-80% slopes, and is the same as described above for Big Cr (USDA 1989).

The associated hazards on the geologic units are: for Quarternary Alluvium - winter flooding, siltation, ponding of rainwater, and high ground water; for Lookingglass - rapid erosion and mass movement, and stream bank erosion.

Main limitations for management activities on the soils are: steepness (slopes >30%), seedling mortality (Digger & Umpcoos), high potential for surface compaction (Preacher, Bohannon, Blachly & Kirkendall), windthrow (Umpcoos & Digger), and high potential for erosion (slopes >15%). Serious care should be taken to avoid damage to vegetation that filters runoff and stabilizes steep slopes.

Hazardous Materials

One location along Lower Slide Cr. within the riparian zone has been identified by the Hazardous Materials Specialist as an environmental concern due to the presence of a drum containing diesel fuel and minor amounts of oil on immediate soil surfaces. The drum will be removed and site cleaned prior to project implementation. Any new hazardous materials sites discovered during project implementation will be promptly investigated by a Hazardous materials specialist.

Section 4

Environmental Consequences

This section provides the scientific and analytic basis for comparing the no-action and proposed action alternatives described in Section II. The potential short- and long-term impacts to the affected resources are discussed here for each project-type as it relates to the issues for each alternative. No irreversible or irretrievable commitment of resources have been identified for either of the alternatives.

Environmental Impacts to Critical Elements of the Human Environment

Examination has shown the following critical elements of the human environment to be *unaffected* by any of the projects:

- | | |
|--|-------------------------------|
| 1) Air Quality | 6) Hazardous Materials |
| 2) Areas of Critical Environmental Concern | 7) Wilderness Values |
| 3) Prime or Unique Farmlands | 8) Cultural & Historic Values |
| 4) Native American Religious Concerns | 9) Port-Orford Cedar |
| 5) Wild & Scenic Rivers | 10) Wetlands |

The remainder of environmental effects are addressed by project-type, including minor, short-term impacts to solid wastes, water quality, riparian areas, floodplains, and T&E species.

RIPARIAN RESTORATION

No Action Alternative

No riparian restoration will take place with this alternative.

Issue No. 1 - Riparian Habitat

Direct Effects: Because no trees would be cut or girdled, canopy cover would remain the same. Riparian vegetation in the areas proposed for treatment would continue to be dominated by vegetation produced by human-induced disturbance (primarily red alder/salmonberry, blackberry, and small multiple-stem myrtles). Plant community and structural diversity would continue to function at levels substantially reduced from historic conditions.

Indirect Effects: Although conifer and long-lived hardwoods such as myrtle and big-leaf maple may eventually recolonize the project areas, continued domination by red alder, salmonberry, Himalayan blackberry, and multiple-stem myrtles will substantially increase the amount of time required for natural recolonization. Suppressed conifers in the project areas will eventually die, ensuring that conifer abundance will remain unnaturally low in these areas. Paucity of conifers combined with reductions in abundance of other tree species would limit the abundance of habitat for organisms that depend on diverse, mature riparian plant communities and the habitat features associated with them (i.e., cavities, structure, large limbs).

Since the No-Action Alternative proposes implementing no restoration, the re-establishment of areas of mid- to late-seral, structurally and biologically diverse riparian communities in the areas proposed for treatment will be postponed until natural succession occurs (50-200 years, depending on location) or might never occur (particularly in stands where exotic vegetation precludes the

establishment of native species without treatment). Absence of these communities will continue to limit habitat abundance and quality on public lands in the M. Fk. Coquille watershed as well as to delay the development of refugia for species dependent on diverse, late-seral riparian stands. Subsequent reductions in populations of these organisms may result in higher management costs if additional species become endangered.

Cumulative Effects: Current information indicates that most private landowners in the watershed are probably not considering restoring riparian lands to their historic condition. Since the No-Action Alternative proposes no restoration projects, no cumulative effects on riparian habitat are predicted.

Issue No. 2: Aquatic Habitat

Direct Effects: Aquatic habitats in areas proposed for riparian silviculture projects would continue to function at the current level (impacted by past riparian management).

Indirect Effects: Woody material delivered to riparian areas and streams would continue to be dominated by alder, be small in size, decompose very quickly, and would not significantly improve the morphology of the stream. In particular, large “key” conifer logs which are retained in the system for long periods of time, and which are effective at trapping and retaining other debris, will not be recruited to these systems until the riparian forest is mature enough to contribute significant amounts through windfall and other natural processes. Without large conifer “key” structures, the formation of complex cover, pool habitat, retention of stream bedload, and energy dissipation, stream channels of Slide, and Brownson Creeks and the M. Fk. Coquille R. will occur at very reduced levels or not at all. Consequently, the capacity for these streams to provide habitat for all aquatic organisms will be greatly reduced.

Cumulative Effects: Current information indicates that most private landowners in the watershed are probably not considering restoring riparian lands to their historic condition. Since the No-Action Alternative proposes no riparian restoration projects, no cumulative effects on aquatic habitat are predicted.

Proposed Action Alternative

Under this alternative, approximately 20 acres will be treated using a combination of brushing, girdling, felling and replanting with a mix of native hardwoods and conifers appropriate for the site.

Issue No. 1: Riparian Habitat

Direct Effects: The proposed project will change the composition of riparian stands in the project areas. Selected red alder, small-stemmed Oregon myrtle, and various shrubs will be cut or girdled, and a mix of native conifer and hardwood species will be established. Maintenance over the next 30 years will reduce competing shrubs and prune selected hardwood branches. A decrease of 60-100% in canopy cover is expected *except* over stream channels, where canopy cover will remain unchanged.

No direct adverse effects to T&E/Special Status wildlife species are expected because the riparian areas selected for projects do not provide foraging or nesting habitat for these species and because daily and seasonal work timing restrictions will be strictly followed if owls or murrelets are determined to be in the vicinity.

No direct adverse effects on most general wildlife are expected because the project will avoid damaging or removing special habitat structures (i.e., snags, trees with cavities, coarse down wood, and other special habitat structures). There may be an unquantifiable short-term adverse

impact to songbirds due to loss of some hardwoods and shrubs.

Indirect Effects: Cutting or girdling of alder trees may indirectly affect the white-footed vole, an species associated with alder communities. Although extremely difficult to detect, white-footed voles are known to occur within sites dominated by red alder, and may be affected by substantial alteration of the existing community. No surveys have been conducted in the proposed project areas; however, it is expected that the project will not seriously affect the total available habitat on public and private lands for this species due to the relatively small size of the project areas and the great abundance of alder-dominated stands across the landscape.

In decades following treatment, the character of the treated riparian stands will change. Douglas-firs and some redcedars and hemlocks will grow clear of the hardwood canopy. Because they are highly shade-tolerant, redcedars and hemlocks may survive as middlestory trees. Retained alders will grow vigorously until senescence. Retained multiple-stem myrtles will expand horizontally past original sizes and become brushy due to increased light levels until they are pruned (at approx. 20 years) to prevent suppression of planted conifers. Eventually, planted trees and retained hardwoods will form a canopy that will suppress shrub growth.

The character of wildlife habitat will also change substantially as a result of the treatment. In contrast to the post-disturbance, early-seral nature of the pre-treatment stands, post-treatment stands will develop the structural and biotic diversity characteristic of the late-seral condition. For example, myrtle stems will enlarge and develop cavities. Scattered mature Douglas-firs with associated large crowns, cavities, and mossy branches will penetrate the hardwood canopy below. Senescent conifers will contribute coarse woody debris to forest floors.

The project is not expected to significantly affect the establishment of noxious weeds in project locations. The project will cause very minimal or no ground disturbance and only native seedlings will be planted.

Cumulative Effects: It is probable that the Bureau of Land Management will undertake similar riparian restoration projects in the M. Fk. Coquille watershed in the future. These projects will be on a limited scale (20-40 acres/yr.), be spaced over time, and will follow strict criteria to avoid adverse impacts to water quality or fish and wildlife habitat. Secondly, current information suggests that private landowners are probably not considering riparian restoration projects on their lands. As a result, only a small portion of the watershed will be affected by these actions. In particular there should be little or no cumulative effect on the white-footed vole from this action because it is expected that sufficient amounts of suitable habitat (alder-dominated stands) will still exist within the watershed to maintain populations of this species. Because the overall ecological effects of each of the projects are expected to be beneficial, any cumulative effects which may result are expected to be positive.

Issue No. 2: Aquatic Habitat

Direct Effects: There should be no direct effects to aquatic habitat as a result of the proposed treatment.

Indirect Effects: It is expected that there will be no decrease in canopy cover directly above the stream channel and because the projects are very limited in scale, no measurable increase in stream temperature is expected. No impacts to bank or floodplain stability are expected because a portion of standing trees will be retained and a minimum no-treatment buffer of at least twenty feet will be retained on each side of the channel.

In the long term (150 years), the treated riparian stand will be capable of delivering large and long-lived coniferous woody material to streams. The addition of this material will help stabilize the stream channel, retain organic material, and create complex rearing habitat for all aquatic

organisms.

Cumulative Effects: Current information indicates that private landowners are probably not considering restoring riparian lands to their historic condition. As a result, only a small portion of aquatic habitat the watershed will be affected by the proposed action. It is probable the Bureau of Land Management will undertake similar riparian restoration projects in the Middle Fork Coquille watershed which may affect aquatic habitat. These projects will be on a limited scale as described above and will follow strict criteria to impacts to water quality or aquatic habitat. Because the overall ecological effects of each of the projects are expected to be beneficial to aquatic habitat, any cumulative effects which may result are expected to be positive.

Instream Restoration

No Action Alternative

No instream restoration will take place with this alternative.

Issue No. 1 - Riparian Habitat

Direct Effects: Because no coarse down wood will be added to riparian zones and floodplains along in Bear Pen, Brownson, Big and Slide Creeks, riparian habitat will continue function at the current level, which is deficient in coarse down wood.

Under the No-Action Alternative, riparian values associated with standing trees will continue at current level because no standing trees will be lined from the riparian forest along Big and Slide Creeks. Additionally, because no standing trees will be removed from the LSR, these areas will also continue to function at their current level.

Indirect Effects: Continued lack of coarse down wood in riparian areas along project streams will limit populations of riparian biota such as herptiles, invertebrates, birds, and small mammals, which depend on these structures for shelter and foraging.

Conversely, if standing trees are not lined from the LSR and portions of the Riparian Reserves, these trees will continue to provide nesting, foraging and perching habitat in these areas as well as serve as a future source of down wood.

Cumulative Effects: Since the No-Action Alternative proposes no instream projects, no cumulative effects on riparian habitat are predicted.

Issue No. 2 - Aquatic Habitat

Direct Effects: Because no large wood will be added, these reaches in project area streams will continue to function at their current level (impacted by past management). The project-area reaches of Big, Slide, Bear Pen and Brownson Creeks would continue to be deficient in large woody structure.

Indirect Effects: Without additions of large woody structure to project-area streams, habitat conditions are not expected to change from 50-100 years, when natural or planted riparian vegetation may contribute large debris through natural processes (windthrow, debris torrents, etc.) During this time, it is unlikely that the stream will recruit enough key structures to aid in the formation of complex cover, pool habitat, retention of bedload and energy dissipation within the channel. As a result, aquatic species such as fishes, amphibians, and macroinvertebrates, which

depend on these conditions will persist at their present or at reduced levels. Without additions of large wood to stream channels, benefits to aquatic species such as increased habitat diversity and long-term structure would be foregone or delayed.

Cumulative Effects: Since the No-Action Alternative proposes no projects, no cumulative effects on aquatic habitat are predicted.

Proposed Action Alternative

Under this alternative, we propose to place 40 cull logs in Bear Pen Cr and 53 cull logs in Brownson Cr. using teams of draft horses. Additionally, using a yarder and cable, 12 trees are proposed to be lined from Riparian Reserves adjacent to Big Creek, 3 trees are proposed to be lined from Riparian Reserves adjacent to Slide Cr, 3 cull trees are proposed to be lined from Matrix lands, and 6 trees are proposed to be lined from an Late-Successional Reserve in the upper Slide Cr. watershed and then placed in Slide Cr.

Direct Effects: The volume of woody debris will immediately increase in the stream, on floodplains, and on hillslopes within 150 feet of stream channels. In Riparian Reserves along Big and Slide Creeks, where trees are proposed to be lined from the riparian zone, this increase will occur at the expense (loss) of large standing conifer trees in these areas. Additionally, there will be a loss of 6 standing trees from the Late-Successional Reserve in the Upper Slide Cr. watershed, and 3 trees from Matrix lands.

As a result of pulling and positioning cull logs and whole trees into the stream channel, there may be some localized, short-term increases in turbidity during implementation of the projects and during the first fall storm. Increases in turbidity should quickly return to background (natural) levels. In Bear Pen and Brownson Creeks, where horses will be used to place logs in the streams, short-term increases in turbidity may occur when horses cross streams; however, these increases are not expected to be significant because stream-crossing by horses will be absolutely minimized and will not occur in areas with unstable soils and streambanks.

There may be localized compaction of roadside and floodplain soils as a result of establishing horse camps along the Brownson and Bear Pen Cr. roads and as a result of using horse teams to pull logs to the stream channel. The compaction is expected to be minimal because camps will be established on previously compacted areas (road pull-outs), an existing road will be used to haul logs when possible, and hauling will be restricted to designated areas.

Because the tree-lining projects along Big and Slide Cr. require the use of heavy equipment, a spill of diesel fuel, gasoline, or hydraulic fluid, although unlikely, could occur. Minor spills (less than 2 gallons) will have little or no chance of migrating to surface or ground water before absorption or evaporation. To prevent adverse effects of a larger spill, Spill Prevention, Control and Countermeasure Plans will be developed for each contract resulting from this EA. Contractors will also be required to furnish and keep Spill Containment Kits.

No direct adverse effects to T&E/Special Status wildlife species are expected from the placement of cull logs in Bear Pen and Brownson Creeks or from the lining of trees along Big and Slide Creeks and from the Slide Cr. LSR because the actions will be carried out in accordance with the Mandatory Terms and Conditions of the Biological Opinions for these species, and seasonal and daily timing restrictions will be strictly followed. In particular, no potential-nesting trees for Marbled Murrelets or Northern Spotted Owls are proposed for lining, and no suitable nest trees are expected to be damaged during lining.

No direct effects on general wildlife from any of the instream projects are expected because the proposed project will avoid damaging or removing special habitat structures (i.e., snags, trees with

cavities, coarse down wood, etc.).

Increases in turbidity may result in immediate adverse effects on special status fish species (e.g., coho and steelhead). For example, the actions could result in short-term increased physiological stress, increases in respiratory rate and volume, and temporary avoidance of project areas. However, because water temperatures are cool in the project streams and because stresses will be very short-lived, the projects are not expected to significantly affect survival or fitness of these species.

Indirect Effects: As a result of the project, the project area stream reaches would contain large “key” logs which will trap and retain smaller debris in the system. Reduction of water velocities, deposition of substrates, retention of organic material, creation of pools and increases in aquatic habitat complexity are expected to occur during the first winter following project implementation. Populations of aquatic organisms will benefit immediately from the addition of this structure. For example, deposition of diverse substrates will benefit macroinvertebrate production and community diversity, resulting in increased fish production in project reaches.

Accumulation of solid wastes (manure) in floodplains is not expected because manure from horsecamps will be transported off site and any manure deposited on floodplain will be buried.

Several positive impacts to wildlife may occur from these proposed projects. Down logs within, over, and adjacent to streams provide improved foraging areas for several species of birds, mammals, and reptiles, and stream-crossing structures for furbearers. Logs in the stream enhance aquatic insect production, providing an important food source for neotropical migrant and resident birds, bats, and small mammals. Additionally, the retention of a portion of the trees lined from the Slide Cr LSR will provide coarse down wood where there is currently a deficit, providing cover and foraging habitat for associated wildlife species.

While the lining of trees from the Slide Cr. LSR and subsequent placement in the Lower Slide Cr. stream channel and riparian zone may benefit aquatic and riparian species, the action may have an adverse affect on the upland portion of the LSR and associated species. This action will remove large trees from the LSR which, as standing trees, currently provide foraging, nesting, and perching habitat for riparian and LSR species as well as serve as potential future snags. Likewise, the conversion of standing trees to down trees in Riparian Reserves along Slide and Big Creeks will remove the habitat benefits these standing trees currently provide. However, in both the Slide and Big Creek Riparian Reserves and in the Slide Cr. LSR, due to the low number of trees selected for removal, and the avoidance of trees currently providing special habitat structures (such as mossy limbs, cavities, etc), the effects of these projects on wildlife are not expected to be substantial.

In the LSR, the effects of the tree-lining are expected to be particularly minimal for several reasons. First of all, the number of trees selected is relatively small compared to existing densities. The habitat benefits being provided by these trees are minimal compared to trees which will be retained. Furthermore, because there are almost no decay class 1 coarse down logs in the LSR stand in the immediate vicinity of these trees, the recruitment of new materials (via the leave portions of these trees) will provide positive habitat components for the LSR. Thus, the overall adverse effect to wildlife habitat quality in the LSR is expected to be negligible.

Cumulative Effects: It is probable that the Bureau of Land Management will undertake similar instream restoration projects in the Middle Fork Coquille watershed. These projects will probably be on a limited scale (1000-2000 ft reaches of stream treated/yr.), be spaced over time, and employ strict criteria to avoid adverse impacts to water quality or fish and wildlife habitat. Secondly, current information suggests that private landowners are probably not considering instream restoration projects on their lands. As a result, only a small portion of stream channels in the watershed will be affected by these actions. Because the overall ecological effects of each of

the projects are expected to be beneficial, any cumulative effects which may result are expected to be positive.

Appendix 1

Planning Area and Project Maps

Appendix 2

Design Features for Riparian Restoration Projects

The following are design features to be used in implementation of the projects:

- # In the myrtle/maple-dominated flats and bottomlands, conifers should not be allowed to become dominant. Rather, only 30-40 trees per acre should initially be allowed to penetrate the hardwood canopy in scattered locations, such that they are able to develop numerous large limbs and massive boles while not out-competing the hardwoods growing beneath them. Subsequent to the time when the conifers grow clear of the hardwood canopy, the planted conifers should be thinned to the approximate historic density of conifers on the site. The thinned conifers can be girdled to create snags, or felled into the stream or onto the forest floor. Pruning and further thinning of the retained hardwood stems may be necessary if there is insufficient light penetration for the planted tress to survive.
- # Where appropriate, provide habitat for wildlife by leaving parcels of forage vegetation; protect and provide snags, large down wood, and hardwood trees containing cavities.
- # Avoid blocking wildlife trails with fallen trees or cut woody material.
- # Protect summer stream temperatures by retaining all portions of the riparian canopy providing shade to the stream channel. Retain a minimum 20' untouched buffer adjacent to the stream.
- # Buffers will be retained along the streams to maintain shade, bank stability, and a source of woody debris for the stream. The following factors should be considered in design of these buffers:
- # Proximity of trees to the stream: the closer to the stream, the more important in protecting the stream.
 - ▶ *Proximity of myrtles to stream:* Myrtles tend to have dense foliage from bottom to top, casting shade is at low angles, as well as high. In the case of multiple stem myrtles, removal of stems on the side of the clump opposite the stream often would have little effect on stream shading. Therefore, such stems may be girdled or cut even though they may be fairly close to the stream.
 - ▶ *Tree lean:* trees leaning away from the stream and providing little shade to the stream or having little potential to fall into the stream, may be considered for cutting/girdling.
 - ▶ *Orthographic shading:* Stream segments confined by steep slopes on one side or the other could conservatively have narrower buffers than unconfined streams because of the shading influence of nearby hillslopes.
 - ▶ *Aspect and stream orientation:* The widest buffers should be retained on the west sides of stream segments when afternoon sun has the greatest capacity to warm the stream. Conversely, narrower buffers could be conservatively left on the north side of streams.
 - ▶ *Existing canopy closure:* Since closed canopies over the streams have a moderating effect on stream temperature, narrower buffers could conservatively be left in these areas
 - ▶ *Stream orientation:* Stream segments with an east-west orientation will tend to need wider buffers on their south sides and narrower buffers on their north sides to afford the same degree of shading to the stream. Stream segments with north-south orientations will tend to need buffers of moderate widths.
- # In general trees should be girdled instead of slabbed because girdled trees stand longer, preventing exposure of middlestory conifers to "shock" caused by a sudden increase in exposure to sunlight. It is also expected that shade cast by girdled trees partially suppresses shrubs which potentially compete for light against planted seedlings. If slabbing is required, cuts should not exceed 1" at deepest point to promote a longer-standing structure.
- # Long-lived hardwoods such as bigleaf maple, Oregon ash, tanoak, chinquapin should be retained. See below for guidelines for myrtle-dominated areas.
- # Hazard trees may be cut during project implementation.
- # All sites will be brushed prior to tree planting, to remove competing vegetation (including salmonberry, Himalayan blackberry, and sword ferns) where necessary. Elderberry and dogwood should be retained where they would not compete excessively with planted trees.

- # Daily timing restrictions shall be applied between March 1 and September 15 when noise exceeds ambient levels to comply with the Mandatory Terms and Conditions of the Biological Opinion for conformance with the Endangered Species Act.
- # Slash from the release treatments will either be hand-piled or lopped and scattered. Where hand-piled, piles will be no smaller than 8' X 8' X 10' high and no larger than 12' X 12' X 12' high. Slash should not be piled near or against standing conifers, nor be placed on any standard-sized ($\geq 16"$ dbh X 16' long) coarse down log(s). Where slash is lopped and scattered, the resulting slash will be no more than one foot deep. Additionally, where appropriate for the site, 1-3 piles of slash/acre may be left to provide additional wildlife habitat. The remaining slash may be burned or otherwise disposed of.
- # Where consistent with Northwest Forest Plan, hardwoods may be sold for fuelwood prior to initial planting of other hardwoods and conifer.

Special Guidelines for Riparian Restoration Projects in Myrtle-dominated Areas

In myrtle/maple-dominated stands, the following project design guidelines apply:

- # Conifers should be planted in myrtle/maple stands only in an attempt to re-establish them where they have been reduced or eliminated, but not in stands where there is no evidence of their historical presence.
- # Riparian myrtle/maple stands that are appropriate for silvicultural manipulation are those which have been impacted by human-caused disturbance. These include stands where conifers have removed during salvage or harvest, and are unable to recolonize the site due to the dense hardwood shade, and stands with an abundance of small diameter multiple-stems in the original stand.
 - Conifers should not become dominant when planted in myrtle/maple stands. Rather, they should penetrate the hardwood canopy only in scattered locations, such that they do not completely out-compete hardwoods growing beneath them. Therefore, conifers should be planted in low densities within myrtle/maple stands and thinned if the density of those that survive to penetrate the hardwood canopy exceeds the pre-established target density.
 - Re-establishment of conifers in a multiple-stem myrtle/maple stand should be attempted only if the density of the hardwood canopy can initially be reduced to $\leq 40\%$ canopy closure. Ideally, the crowns of the retained hardwoods should subsequently expand such that no more than 60% canopy closure occurs within 10-30 years.
 - Ideally, one or several of the most dominant stems from each multiple-stem myrtle clump should be retained in order to maintain myrtle on the site at its original distribution while accelerating the growth of the retained stems.
 - Medium-aged ($\geq 18"$ dbh) myrtles and bigleaf maples are prone to developing cavities which are of high value to wildlife. Therefore, stems $\geq 18"$ dbh should seldom be removed and all myrtle stems being considered for removal should be inspected for the presence of cavities and retained if they are present.

Appendix 3

Daily and Seasonal Restrictions for Fishes and T&E Wildlife Species

All instream work restricted to the period from July 1 to September 15th, as set by the Oregon Department of Fish and Wildlife (unless a project-specific exception is granted after field review by ODFW personnel).

T&E wildlife species include Marbled Murrelet, Northern Spotted Owl, Bald Eagle, and Peregrine Falcon. Daily and seasonal timing restrictions are in accordance with the Mandatory Terms and Conditions/ Conservation Recommendations of the BO. ¹Time of Day restriction: no activity from 2 hours before sunset to 2 hours after sunrise.

PROJECT TIMING		
Project/Activities	Seasonal Restrictions	Daily Restriction ¹
CULL LOG PLACEMENT- Bear Pen & Brownson Cr.		
-Delivery of logs	None	None
-Brushing haul trail	Hand brushing-none No chainsaw from 1 Mar. to 30 Jun.	Hand brushing: none Chainsaw: July 1 - Sept. 15 restricted ¹
-Placement of logs	O.D.F.W. Instream Work Period	None
Big & Slide Cr. Tree Lining	No Activity 1 Apr. To 5 Aug Work also restricted to ODFW Instream Work Period	6 Aug. -15 Sept: restricted ¹
Brownson Cr. Riparian		
-Site Prep	Hand brushing: none No chainsaw from 1 Mar. to 30 Jun.	Hand brushing: none Chainsaw: July 1 - Sept. 15 restricted ¹
-Planting	None	None
-Fuelwood Sale	No Chainsaw from 1 Mar. to 30 Jun.	Chainsaw: July 1 - Sept. 15 restricted ¹

Slide Cr. Riparian -Site Prep -Planting	Hand brush: none No chainsaw from 1 Apr. to 30 Jun. N/A	Handbrush: none Chainsaw: 1 July-15 Sept: restricted ¹ N/A
M. Fk. Coquille Riparian -Site Prep -Planting	Handbrush: none No chainsaw from 1 Mar to 30 Jun. N/A	Handbrush: none Chainsaw: July 1 - Sept. 15 restricted ¹ N/A

Appendix 4

Selection Criteria for Proposed Lining Trees Slide and Big Creek Tree-lining Projects

Marbled Murrelet considerations-do not select trees which:

- # Have the potential to provide nesting habitat for murrelets (including trees with broken tops, well-developed crowns, large diameter mossy branches or similar nesting platforms)
- # Provide cover to potential Murrelet nesting trees
- # Have the potential to damage Murrelet nesting trees during lining

Spotted Owl considerations- do not select trees which:

- # Have the potential to provide nesting habitat for owls (including trees with broken tops and cavities).
- # Have the potential to damage existing trees, snags, or down wood, or other foraging or nesting structures

General wildlife considerations- do not select trees or snags which:

- # Contain cavities, broken tops or any other special feature
- # Provide cover or protection to high-value wildlife trees
- # May damage high-value trees or snags during lining
- # May damage down wood or other special habitat features during felling/yarding
- # Contain evidence of red tree vole activity
- # Will produce large canopy gaps or induce fragmentation if removed

Other considerations-do not select trees which:

- # Provide shade to streams
- # Are important for slope/soil stability
- # That have heavy epiphyte (lichens and bryophytes) loads

DO select trees which:

- # show evidence of disease and are therefore likely to fall anyway
- # are close to the road corridor

*Lining consists of using a yarder and cable to pull a live tree over by roots.

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Proposed Watershed Restoration Projects

The USDI Bureau of Land Management, Coos Bay District Office, is preparing an environmental Assessment (EA) for proposed watershed restoration projects in the Big Creek and Slide Creek drainages of the Middle Fork Coquille River and in the Edson Creek drainage of the Sixes River. The Big and Slide Creek drainages are near Bridge, Oregon. The Sixes River is located approximately 15 miles north of Port Orford. The restoration projects will be carried out as part of the Jobs-in-the-Woods program under the Northwest Forest Plan.

The EA will analyze proposed projects consisting of placing whole trees and cull logs in streams to restore aquatic habitat, removing hardwood and shrub species along streambanks and replanting with conifer, and adding structure to stream channels to reduce bank erosion.

A public scoping meeting to gather input for these projects will be held from 7 p.m. to 9 p.m. on Wednesday, January 28th, 1998 in the Junior auditorium of the Coquille Community Building (115 N. Birch). The public is invited to attend.

Questions about the meeting or projects should be directed to Jo Christensen at 756-0100. Written issues, concerns, alternatives, and/or ideas may be sent to BLM, 1300 Airport Lane, North Bend, OR 97459-2000, attn. Jo Christensen. Comments may also be sent to the Coos Bay District via email, at: coosbay@or.blm.gov.

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